

Application No. 09/714,404

Amendment After Allowance

AMENDMENTS TO THE CLAIMS

Please amend the following claims:

1. (Previously Presented) A method of allowing a home mobile telecommunications network to authenticate mobile user equipment located in an area covered by a serving mobile telecommunications network, wherein
 - the mobile user equipment has a subscription with the home mobile telecommunications network,
 - the mobile user equipment is adapted to make and receive telephone calls when within an area covered by the home mobile telecommunications network by wireless communication between the mobile user equipment and the home mobile telecommunications network, and
 - the home mobile telecommunications network is operable to generate authentication vectors for enabling the mobile user equipment to obtain an identifier having a value from the serving network, which identifier is transmitted from the mobile user equipment to the serving network to allow the mobile user equipment to make calls by wireless communication between the mobile user equipment and the serving mobile telecommunications network when within the area covered by the serving mobile telecommunications network,
- the method comprising the steps of:
 - passing an authentication element forming at least part of an authentication vector, from the serving mobile telecommunications network to the mobile user equipment,
 - deciding in the user equipment, based at least in part on the value of a predetermined field contained in the authentication element, when to generate a termination message, and
 - passing the termination message from the mobile user equipment to the serving mobile telecommunications network, which message comprises said identifier but with a second value different from said value, and which second value indicates that the serving mobile telecommunications network must obtain a further authentication vector from the home mobile telecommunications network before allowing the user equipment to make further calls.
2. (Original) A method according to claim 1, wherein the termination message, is a predetermined key set identity value.
3. (Original) A method according to claim 1, wherein the predetermined field is an authentication management field.

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4. (Original) A method according to claim 1, wherein the said decision is taken based on the total call duration which has accumulated since the authentication element containing the predetermined field was first received by the mobile user equipment.
5. (Original) A method according to claim 1, wherein the said decision is taken based on the time elapsed since the authentication element containing the predetermined field was first received by the mobile user equipment.
6. (Original) A method according to claim 1, wherein the said decision is taken based on the total number of calls made since the authentication element containing the predetermined field was first received by the mobile user equipment.
7. (Original) A SIM for mobile user equipment embodying the method steps of claim 1.
8. (Previously Presented) A method of allowing a home mobile telecommunications network to authenticate a mobile user equipment located in an area covered by a serving mobile telecommunications network, wherein
 - the mobile user equipment has a subscription with the home mobile telecommunications network,
 - the mobile user equipment is adapted to make and receive telephone calls when within an area covered by the home mobile telecommunications network by wireless communication between the mobile user equipment and the home mobile telecommunications network and
 - the home mobile telecommunications network is operable to generate authentication vectors for enabling the mobile user equipment to obtain a key set identifier having a value from the serving network, which key set identifier is transmitted from the mobile user equipment to the serving network to allow the mobile user equipment to make calls by wireless communication between the mobile user equipment and the serving mobile telecommunications network,
 - the method comprising the steps of:
 - requesting service from the serving network to which the user equipment is not directly subscribed,
 - passing the request for service from the serving network to a home operator network to which the user equipment is directly subscribed,
 - generating an authentication vector in the home operator network which includes an authentication management field,

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passing the authentication management field, contained in an authentication vector, from the home operator network to the serving network,

passing an authentication element forming at least part of the authentication vector from the serving network to the user equipment,

extracting in the user equipment the authentication management field from the authentication element,

generating in response at least to a predetermined value of the authentication management field, the a predetermined key set identifier,

deciding in the user equipment based at least in part on the value of the authentication management field contained in the authentication element, when to generate the key set identifier which has the value indicating that the serving network must obtain a further authentication vector before allowing the user equipment to make further calls, and

passing the key set identifier to the serving network.

9. (Cancelled)

10. (Currently Amended) A method according to claim 9 8, wherein the said decision is taken based on the total call duration which has accumulated since the authentication element containing the predetermined filed was first received by the mobile user equipment.

11. (Currently Amended) A method according to claim 9 8, wherein the said decision is taken based on the time elapsed since the authentication element containing the predetermined field was first received by the mobile user equipment.

12. (Currently Amended) A method according to claim 9 8, wherein the said decision is taken based on the total number of calls made since the authentication element containing the predetermined field was first received by the mobile user equipment.

13. (Previously Presented) Mobile user equipment for use in a servicing mobile telecommunications network when located in an area covered by a servicing mobile telecommunications network wherein

the mobile user equipment has a subscription with the home mobile telecommunications network

the mobile user equipment is adapted to make and receive telephone calls when within an area covered by the home mobile telecommunications network by wireless communication between the mobile user equipment and the home mobile telecommunication network, and

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the home mobile telecommunications network is operable to generate authentication vectors for enabling the mobile user equipment to obtain an identifier having a value from the serving network, which identifier is transmitted from the mobile user equipment to the serving network to allow the mobile user equipment to make calls by wireless communication between the mobile user equipment and the serving mobile telecommunications network,

the mobile user equipment including:

means for receiving from the serving network an authentication element forming at least part of an authentication vector,

decision means for deciding in the user equipment, based at least in part on the value of a predetermined field contained in the authentication element, when to generate a termination message, and

means for passing the termination message from the mobile user equipment to the serving network, which message comprises said identifier but with a second value different from said value, and which second value indicates that the serving network must obtain a further authentication vector from the home operator before allowing the user equipment to make further calls.

14. (Original) Mobile user equipment according to claim 13, including accumulator means for monitoring the total call duration which has accumulated since the authentication element containing the predetermined field was first received by the mobile user equipment and providing a value representative of the said total call duration to the decision means.

15. (Previously Presented) Mobile user equipment according to claim 13, including timer means for measuring the time elapsed since the authentication element containing the predetermined field was first received by the mobile user equipment and providing a time value representative of the said elapsed time to the decision means.

16. (Previously Presented) Mobile user equipment according to claim 13, including counter means for counting the total number of calls made since the authentication element containing the predetermined field was first received by the mobile user equipment and providing a call number value representative of the said total call number to the decision means.

This listing of claims replaces all prior versions, and listings, of claims in the application.